



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,023	12/22/2005	Guang-Zhong Yang	60065-0014	8784

29989 7590 04/28/2009
HICKMAN PALERMO TRUONG & BECKER, LLP
2055 GATEWAY PLACE
SUITE 550
SAN JOSE, CA 95110

EXAMINER

BUKOWCZYK, JEREMY

ART UNIT	PAPER NUMBER
----------	--------------

3661

MAIL DATE	DELIVERY MODE
-----------	---------------

04/28/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/529,023	Applicant(s) YANG ET AL.	
	Examiner Jeremy Bukowczyk	Art Unit 3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>23 March 2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 5 and 6 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter because the claimed method of identifying a visual fixation point of a user observing a stereo image formed by visually superposing mono images comprising the steps of presenting one mono image to each user eye to form the stereo image and tracking the fixation point of each eye, in which the three dimensional position of the visual fixation point is determined is not tied to a particular machine or apparatus and does not transform a particular article to a different state or thing. The Supreme Court has enunciated a definitive test to determine whether a process claim is tailored narrowly enough to encompass only a particular application of a fundamental principle rather than to pre-empt the principle itself. A claimed process is surely patent-eligible under § 101 if: (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing. See *Gottschalk v. Benson*, 409 U.S. 63, 70, 71 (1972); *In re Bilski*, 545 F.3d 943, 88 USPQ2d 1385 (Fed. Cir. 2008).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: structure to carry out the method of identifying a visual fixation point of a user observing a stereo image formed by visually superposing mono images comprising the steps of presenting one mono image to each user eye to form the stereo image and tracking the fixation point of each eye, in which the three dimensional position of the visual fixation point is determined.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 2, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borst et al. (WO 95/01757).

As per claims 1, 2, and 8, Borst et al. discloses the claimed remote controlled robotic manipulator for manipulating a moving object comprising a motion sensor for sensing motion of a region of an object to be manipulated, and a controller for locking

Art Unit: 3661

motion of the robotic manipulator relative to the region of the object based on the sensed motion, wherein the controller further controls for which region of the object the motion sensor senses motion (Page 1, lines 9-17; Page 8, line 10 – Page 9, line 34; Page 10, lines 1-5; Page 10, lines 15-24; Page 11, lines 5-29; Page 22, line 32 – Page 23, line 14). Borst et al. further discloses the claimed manipulator in which the motion sensor is controllable by a human user (Page 23, line 30 – Page 24, line 11). Borst et al. further discloses the claimed manipulator wherein the region is within a human undergoing surgery and wherein the object is a tissue that is the subject of the surgery (Page 7, lines 16-20; Page 12, line 31 – Page 13, line 5; Col. 22, lines 22-26).

Borst et al. does not explicitly disclose the claimed a motion sensor. However, by disclosing in the reference a tracking control unit to control a robot arm to track a moving target area (Page. 11, lines 5-29), Borst et al. implicitly discloses a motion sensor. Therefore, from this teaching of Borst et al., it would have been obvious to one having ordinary skill in the art at the time of the invention to include a motion sensor in a remote controlled robotic manipulator in order to provide a system for precise manipulation of a moving object within the chest cavity, e.g. robotic precise surgery on the moving object, without the need to open the chest (Page 7, lines 15-20).

8. Claims 3-5, 7, 9, 10, 12, 13, 15, 16, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borst et al. (WO 95/01757) as applied to claim 1 above, and further in view of Guyton et al. (6,027,216).

As per claims 3-5, 7, 9, 10, 12, 13, 15, 16, and 18-20, Borst et al. further discloses the claimed manipulator in which the user views a remote representation of

Art Unit: 3661

the object (Page 14, line 34 – Page 15, line 1; Page 17, lines 18-22; Page 19, line 30 – Page 20, line 5). Borst et al. further discloses the claimed manipulator wherein the region is within a human undergoing surgery and wherein the object is a tissue that is the subject of the surgery (Page 7, lines 15-20; Page 12, line 31 - Page 13, line 5; Page 22, lines 22-26). Borst et al. further discloses the claimed observing a stereo image formed by visually superposing mono images, comprising the steps of presenting one mono image to each user eye to form the stereo image (Fig. 4; Page 17, line 18 – Page 18, line 14; Page 21, lines 9-17). Borst et al. further discloses the claimed manipulator comprising left and right LCD displays that display left and right images (Page 35, lines 33-34). Borst et al. further discloses wherein the mono images are obtained from sensors that are observing a human body as part of a surgery (Page 1, lines 9-17). Borst et al. further discloses the claimed stereo image comprising first and second displays for displaying mono images, a stereo image presentation module for visually super-posing the mono images to form the stereo image (Fig. 4; Page 17, line 18 – Page 18, line 14; Page 21, lines 9-17).

Borst et al. does not explicitly disclose the claimed manipulator in which the motion sensor is controllable by tracking the visual fixation point of the user, wherein the controller determines the region of the object based on a signal from an eye tracking apparatus that tracks a visual fixation point of one or more eyes of a user, wherein the eye tracking apparatus identifies the visual fixation point of the user and tracking the fixation point of each eye, and an eye tracker for tracking the fixation point of each eye. Guyton et al. in the same field of invention discloses the claimed manipulator in which

Art Unit: 3661

the motion sensor is controllable by tracking the visual fixation point of the user, wherein the controller determines the region of the object based on a signal from an eye tracking apparatus that tracks a visual fixation point of one or more eyes of a user, wherein the eye tracking apparatus identifies the visual fixation point of the user and tracking the fixation point of each eye, and an eye tracker for tracking the fixation point of each eye (Col. 20, line 45 - Col. 21, line 8; Col. 35, lines 43-46; Col. 35, lines 54-57; Col. 36, lines 34-36). From this teaching of Guyton et al., it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teaching so Borst et al. and Guyton et al. in order to assess the direction of fixation of an eye (Guyton et al., Col. 3, lines 66-67).

9. Claims 6, 11, 14, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borst et al. (WO 95/01757) and Guyton et al. (6,027,216) as applied to claims 5, 7, 10, and 16 above, and further in view of Jones et al. (EP 1056049 A2).

As per claims 6, 11, 14, and 17, the combination of Borst et al. and Guyton et al. does not explicitly disclose the claimed eye tracker determines a three-dimensional position of the visual fixation point. Jones et al. in the same field of invention discloses the claimed eye tracker determines a three-dimensional position of the visual fixation point (Paragraphs [0014]-[0021]). From this teaching of Jones et al. it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Borst et al., Guyton et al., and Jones et al. in order to calculate the region of space within the dataset that the user is looking at (Jones et al., Paragraph [0016]).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mason discloses determining the orientation of an eyeball so that aircraft pilots may aim their weapons without using their hands. Isonuma discloses a method of inputting three-dimensional shape information.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy Bukowczyk whose telephone number is (571) 272-5930. The examiner can normally be reached on Monday-Friday 8:00 AM and 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/529,023

Page 8

Art Unit: 3661

/J. B./

Examiner, Art Unit 3661

/Thomas G. Black/

Supervisory Patent Examiner, Art Unit 3661